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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741.724	12/19/2000	Santhana Krishnamachari	US000335	7516

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER

DO. CHAT C

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 04/07/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/741,724

Applicant(s)

KRISHNAMACHARI ET AL.

Examiner

Chat C. Do

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3-15,17-27 is/are pending in the application.
- 4a) Of the above-claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3-15,17-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment A, filed 2/23/2004.
2. Claims 1, 3-15, and 17-27 are pending in this application. Claims 1, 15, and 27 are independent claims. In Amendment A, claims 1, 15, and 27 are amended and claims 2, 16, and 28 are cancelled. This action is made final.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1, 3-15, and 17-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, the limitation "acquiring the maximum available quantity of computational resource units" in lines 9-10 is unclear whether the maximum available quantity of computational resource unit is defined by operator as an allowed processing time or it is defined automatically by system as available resources (e.g. cost, performance, processing time...). For examination purposes, the examiner considers the maximum available quantity of computational resource unit is acquired by operator as an allowed processing time. Claims 15 and 27 have the same problem.

Thus, claim 3-14 and 17-26 are also rejected as being dependent on the rejected base claims 1 and 15 respectively.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being obvious over Chen et al. (U.S. 5,999,958) in view of Riolfo (U.S. 4,849,922).

Re claim 27, Chen et al. disclose a decoder which scales video and still image decoding computational complexity with available computational resources (abstract as IDCT processes), the decoder comprising: a variable length decoder (col. 6 lines 33-38); an inverse quantizer which dequantizes signals received from the variable length decoder (col. 1 lines 29-31); and an approximate inverse discrete cosine transform (lines 7-12 in abstract) that scales decoding computational complexity in accordance with maximum available quantities of computational resource units (col. 1 lines 12-16), wherein the transform decodes encoded digital image and video data by performing a plurality of data multiplications each data multiplication having a data dependent value multiplied by a data independent value (col. 1 lines 35-55), and the performance of each data multiplication by the transform requiring a predetermined quantity of computational resource units (inherently for multiplication operation). Chen et al. do not disclose a transform performing a selected one of the data multiplications if a determined maximum quantity of the computations resource units available for the selected data multiplication

is sufficient for performing same, or the transform performing the selected data multiplication with a shift-operation that requires a quantity of computational resource units which is less than is required for performing the selected one data multiplication. However, Riolfo discloses throughout disclosure that the key of improving DCT transform computation is to reduce the processing time (col. 1 line 44) and simplify the hardware (col. 2 lines 52-54). Riolfo discloses that the processing time between direct multiplication operation and shift-add operation is depending on the number of bits (e.g. equations in col. 2 lines 66-67 for multiplication by shift-add operation and equations in col. 1 lines 55-56 for direct multiplication operations). In addition, Riolfo also discloses the equivalent multiplication operation, the shift-add operation by shifting the arguments accordingly and add the intermediated terms to yield the multiplied result, would reduce the computation time (col. 2 lines 52-55). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add a mechanism to select either between the direct multiplication operation and the equivalent multiplication by shift-add operation using a computational resource units (e.g. processing time, computational time, power dissipation) wherein the advantage is clearly addressed as seen in Riolfo's invention into Chen et al.'s invention because it would enable to reduce space/hardware requirements, computing time, and power dissipation (col. 2 lines 52-54).

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Allowable Subject Matter

7. Claims 1 and 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

8. Claims 3-14 and 17-26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-15, and 17-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2124

April 2, 2004

Kakali Chaki

**KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**